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DEMAND-SIDE INNOVATION POLICY: EUROPEAN TRENDS

ABSTRACT. The theoretical underpinnings and practical experiences of demand-side innovation policy are considered in the paper. Modern European demand-oriented innovation policy trends are reviewed. On that basis, the need for fostering demand-side innovation policy initiatives in Ukraine is grounded and the main directions of national innovation policy improvement are outlined.

KEY WORDS: innovation policy, innovation demand, innovation supply.

ПОЛІТИКА СТИМУЛЮВАННЯ ПОПИТУ НА ІННОВАЦІЇ: ЄВРОПЕЙСЬКІ ТЕНДЕНЦІЇ ТА ВИКЛИКИ ДЛЯ УКРАЇНИ

Анотація. У статті розглянуто теоретичне підґрунтя та практичний досвід провадження державної політики, спрямованої на стимулювання попиту на інновації. Наведено сучасні тенденції європейської політики у сфері формування інноваційного попиту. На цій основі обґрунтовано необхідність підтримки ініціатив щодо активізації попиту на інноваційні продукти і послуги та окреслено ключові напрямки удосконалення державної інноваційної політики у цій сфері.
Ключові слова: інноваційна політика, попит на інновації, пропозиція інновацій.

Introduction. With increased globalization of markets and technological changes, innovation becomes crucial to provide a strong competitive advantage. Various strategies are implemented by institutions and companies to sustain product innovation and to cope with the new demands and requirements. Governments are also developing policies to support innovation initiatives. Within this framework, it is important to understand how state policy tools may stimulate innovation activity, encourage adoption of new approaches

to innovation management and engage economic actors in the innovation process. In the discourse of innovation policy there are two major approaches to the measures used — supply-side and demand-side tools. Contemporary views support the idea of a balance between these innovation policy measures, but at the present time the emphasis has shifted towards demand-side instruments. The modern trends prove renewed interest in demand-side innovation policies at the European Union level. Unfortunately, in these latter days the macroeconomic situation in Ukraine constrains the space for new initiatives in state innovation policy, but even so the government should provide targeted support measures for innovation development in order to maintain national competitiveness.

Purpose of the paper. The aim of this paper is to highlight some of the leading demand-side policy instruments adopted by European policy makers. Focusing in particular on demand-side practices in relation to innovation, the paper describes some demand-side approaches to innovation in the EU, and ends by outlining the state of the art in Ukraine. European countries have successfully introduced practices in demand-side innovation policies, from which lessons can be learned for innovation policy improvement in Ukraine.

Summary of findings. Rapidly growing demand is a key incentive for investment in the innovation process and a strong determinant of technology diffusion and absorption. The demand side of innovations, which reflects the ability and willingness of potential private demanders (buyers and users) to ask for, acquire and adopt different types of innovation, has always been a significant part of public policy. State activity is critical for improving demand competence of public and private actors, primarily due to the information asymmetry of markets for innovations [1]. Taking into consideration poor interactions between initiators of innovations and further investors, companies, especially small and medium-sized enterprises (SMEs), often do not have sufficient capabilities to assess customer needs while potential users do not fully realize where innovations create added value. Moreover, in national environments with a low level of entrepreneurial motivation to innovative activity, a lack of demand for innovative products and services may cause a critical hindrance. From a policy point of view, government is enabling to stimulate such demand through a set of direct and indirect measures such as public procurement, subsidies and incentives for business investments in innovative technologies. Thus, government actions are aimed at complementing market mechanisms for effective innovation activity coordination and harmonization.

In the innovation policy context, there is a distinction between supply-side and demand-side measures [2]. They capture the huge variety of instruments — in starkly simplified typology they cover different kinds of financial and non-financial support. Supply-side policy instruments for innovations aim at increasing companies` incentives to invest in research and development (R&D) by reducing investment costs and sharing risks of uncertainty related to innovation activities. They include direct funding of business R&D projects through grants, subsidies, subsidized loans, and equity financing, fiscal measures (tax reductions and incentives for innovation in firms), debt and risk sharing schemes, technology extension services, non-financial support services such as brokerage and facilitation of networking.

The main objective of demand-side policies is to increase demand for innovation so as to create substantial incentives for innovation, to improve conditions for the adoption of innovations in certain areas and overall to boost innovation performance in the economic environment. Demand-side policy measures may include public procurement tenders for innovative entrepreneurs, transparent regulations and supportive standards, cost-reimbursement contracts, facilitation of private demand for innovations (for example, through guaranteed tariffs for innovative products or services) and encouragement of innovative culture.

According to *Jakob Edler* (2013), demand-side innovation policy may be defined as all public actions to increase the demand for innovations (the willingness and ability to buy and use innovations), to improve the conditions for the uptake of innovations, and to speed up the diffusion of innovations through improving user involvement in innovation production [3]. In recent years demand-based innovation policy has been regarded as the most important area to learn for European policy makers. Demand conditions are increasingly recognized as critically important to bring the economy to an innovation based development path. Recent studies show that about 75 % of EU member states have demand-side innovation measures on their policy agendas [4]. In developed countries there is a wide range of direct and indirect support programs to stimulate firms to invest more in research and to make the transformation of knowledge into innovative products more profitable. By contrast, governments in developing and emerging countries are increasingly challenged to provide policy that would stimulate innovation and facilitate diffusion of existing knowledge and technologies. The innovation process in these countries is determined not only by the level of technological

complexity, but also by the institutions, infrastructure and framework conditions where companies operate. Overall, due to geopolitical uncertainties and complex economic issues, business framework conditions for entrepreneurship and innovation development in Ukraine are mediocre — in the 2015 Global Innovation Index (GII) Ukraine ranked only 64th [5]. In the past years Ukraine has performed well in terms of human capital and research, being well above other lower-middle-income innovation achievers, in particular by reason of its performance in tertiary enrolment and knowledge creation. Ukraine`s business framework weaknesses in relation to innovation policy include poor infrastructure (127th in GII sub-index), rigid innovation linkages (105th in GII sub-index) and market sophistications (89th in GII sub-index).

According to the 2015-2016 Global Competitive Index (GCI), Ukraine scores well on indicators like quality of the education system and scientific research institutions, on the other hand, the position of Ukraine is weak in effectiveness of taxation on incentives to invest, affordability and availability of financial services, intellectual property protection and the state of cluster development [6].

Thus, while Ukraine has a rich human capital and scientific research base, it is lacking in the ability to transform its knowledge into commercial successes. An analysis of recent innovation policy activities in Ukraine showed a limited range of demand-side policy instruments. Multiple government initiatives related to innovation activity coordination have been declared in Ukraine over recent years, however, many of the policy documents remain at a conceptual level and no concrete actions have been adopted. The business sector, including large companies, SMEs, knowledge-intensive start-ups and spin-offs, plays a vital role in the market for innovative products and services, both as a customer and supplier. The insufficient level of innovation demand in Ukraine is particularly caused by fact that large businesses in traditional sectors demonstrate on average low knowledge intensity. They often have the financial resources to procure technologies from abroad — to some extent it may contribute to the national innovation performance, but such type of activity does not necessarily generate demand for the outputs of Ukrainian research institutions.

The business entities themselves must be motivated to adopt new products and processes — innovation activity should bring benefits to them, both tangible and intangible. According to the official statistics, domestic companies in Ukraine have low intention to invest in innovation. The role of the business sector tends to decrease regarding

implementation of R&D and there is no focus on strategic development of innovative entrepreneurship.

The state budget provides funding for R&D, although the focus is primarily on the academic sector and innovation activity in the business sector is mainly financed from companies' own funds. The situation is challenging — the level of R&D financing as a proportion of gross domestic product has declined over the years. The funding of scientific institutes and research organizations depends on the state budget and there is low domestic demand for their outputs due to the limited technology intensity of domestic production.

Promising sources of innovation demand may be small knowledge-intensive companies, including start-ups and spin-offs, but the current economic crisis has weakened the financial status and competitive position of many SMEs. Ukraine has entrepreneurial potential, although in modern economic reality, domestic SMEs typically lack the required internal financial resources and technical capabilities and are not strongly motivated to undertake innovation activities. Financial support programs for SMEs are very limited, they were expected to be available through the Fund for Small Innovation Business Support, but no state funding has been provided to this facility since 2013 [7; 8].

Favourable framework conditions facilitating information flows between innovation supply and demand are particularly important for innovation activity. The bottleneck in the Ukrainian national innovation system is that the scope for exploitation of potentially available opportunities by key actors is extremely limited due to financial and administrative constraints. Some subsystems of innovation infrastructure exist, although their effectiveness remains curtailed by funding problems and lack of targeted support (for example, in 2014 there were 82 business-incubators for innovative start-ups, but they can be characterized by low operational capacity — only 27 of them were functioning during the given period) [7]. It is further noted that innovation leaders in the EU tend to perform well in terms of collaboration between the academic sector and business (i.e. strong industry-science linkages). In Ukraine the relations between the main components of the national innovation system remain weak. Ukrainian Technology Transfer Network was introduced to address this challenge and to bring together research centers and SMEs, but it has had very limited impact to date and needs to be further developed.

Conclusions. To sum up, the demand for innovation in Ukraine is generally weak, and the need for fostering demand-side initiatives should be considered as a key policy imperative, without which strong

intersectoral linkages between various actors of innovation process will not develop. A crucially important recommendation to the government of Ukraine would be to enhance the innovation ecosystem in the country and to review the current incentives for innovation adoption — institutions should complement demand-side policy tools (by encouraging firms to consume innovations and scientific developments) with supply-side instruments (by stimulating activity of companies — suppliers of innovation products) in order to create a strategic institutional framework for innovation development. Future research could focus on providing detailed analysis of the risks, limitations and obstacles of demand-oriented innovation policy implementation in Ukraine.

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АКТУАЛІЗАЦІЯ ЗАВДАНЬ УПРАВЛІННЯ ІННОВАЦІЙНО-ТЕХНОЛОГІЧНИМ РОЗВИТКОМ ПІДПРИЄМСТВ

АНОТАЦІЯ. Оцінено існуючий стан інноваційно-технологічного розвитку підприємств в Україні. Визначені основні проблеми та ймовірні причини їх виникнення. Обґрунтовано актуальність розробки теоретичних засад та інструментарію управління інноваційно-технологічним розвитком. Оцінено поточний стан розробки даної проблематики в працях закордонних і вітчизняних дослідників. Визначено пріоритетні напрями наукового пошуку.

КЛЮЧОВІ СЛОВА: інноваційно-технологічний розвиток, управління інноваційно-технологічним розвитком, технологічний менеджмент, концепція відкритих інновацій, технологічні потоки.

THE URGENCY MANAGEMENT OF INNOVATION AND TECHNOLOGICAL DEVELOPMENT OF ENTERPRISES

ABSTRACT. It is reviewed the current state of innovation and technological development of enterprises in Ukraine. There are determined the main problems and the possible reasons for their emergence. There are given reasons for the necessity to work out theoretical principles and tools for management of innovative and technological development. It is made the above problem overview in current works of foreign and local researchers. There are determined priority directions of the scientific research.

KEY WORDS: innovative and technological development, management of innovation and technological development, technological management, the concept of open innovations, technological flows.